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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,940

Applicant(s)

BAKER ET AL.

Examiner

Candal Elpenord

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9 November 2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 1-14 are objected to because of the following informalities: Appropriate correction is required.

Regarding claim 1, the "(100)". It is suggested to applicant to remove or cross out the reference numbers. Similar problems exist for claims 3, 8-9, 11 and 14. Claims 2, 4, and 6-13 since they depend on claims 3 and 5.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-6 and 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al (US 2003/0063583 A1) in view of Diachina et al (US 5,633,874)

Regarding claim 1, Padovani et al. discloses a communication system (fig. 2, Communications System, recited in paragraph 0052, lines 1-11) having a downlink indicator channel (fig. 5 control channel 502 used for paging messages, recited in paragraph 0136, lines 1-13) for the transmission of an indicator signal (fig. 5, "Base Station 502 transmits paging signal", recited in paragraph 069, lines 1-7) indicating that a data packet is ("data to be transmitted", recited in paragraph 0069, lines 1-4 and paragraph 0017, lines 8-14) scheduled to be transmitted on a downlink data channel ("forward link control channel", recited in paragraph 0136, lines 1-6) from a primary station (fig. 5, Base Station 502 or fig. 1, 4a-4f) to a secondary station (fig. 5, Mobile Station 504 and fig. 1, MS 6a-6f), the secondary station (fig. 5, , Mobile Station 504) having receiving means (fig. 5, Mobile Station 504 receiving paging message on control channel, recited in paragraph) for receiving the indicator signal ("mobile station responding to paging messages, recited in paragraph 0018, lines 3-13) and the data packet ("mobile station receiving data", recited in paragraph 0041, lines 3-6), acknowledgment means ("link measurement of signals and subsequent transmission to

base station", recited in paragraph 0078, lines 1-12 and "error detection and subsequent NACK", recited in abstract, lines 9-15) for transmitting a signal to the primary station (fig. 5, Base Station or fig. 4a-4f) to indicate the status ("upon decoding the paging messages, mobile station measures forward link signal and transmits to base station", recited in paragraph 0044, lines 1-6 as shown in fig. 5, Mobile Station 504 and 506) of the received data packet (fig. 5, MS receiving forward link packets 512, recited in paragraph 0070, lines 18 and "decoding of data packets", recited in paragraph 0076, lines 1-22), **regarding claim 2**, a system (fig. 2, Communications System, recited in paragraph 0052, lines 1-11) wherein characterized in that the status signal (fig. 5, "see steps 504-508, recited in paragraph 0069-0070-same time slot is being used) is the same signal as that used for a negative acknowledgement ("decoding of data packet and subsequent NACK", recited in paragraph 0084, lines 1-14) wherein the secondary station comprising means for transmitting on an uplink channel a status signal to indicate receipt of the indicator signal before a positive or negative acknowledgement to indicate the status of the received data packet, **regarding claim 3**, a primary station (fig. 5, Base Station 502 or fig. 1, Base Station 6a-6f, recited in paragraph 0050, lines 1-20) for use in a communication system (fig. 2, Communications System, recited in paragraph 0052, lines 1-11) having a downlink indicator channel (fig.5 control channel 502 used for paging messages, recited in paragraph 0136, lines 1-13) for the transmission of an indicator signal (fig. 5, "Base Station 502 transmits paging signal", recited in paragraph 069, lines 1-7) indicating that a data packet ("data to be transmitted", recited in paragraph 0069, lines 1-4 and paragraph 0017, lines 8-14) is

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scheduled to be transmitted on a downlink data channel (fig.5 control channel 502 used for paging messages, recited in paragraph 0136, lines 1-13) from the primary station(fig. 5, Base Station 502 or fig. 1, 4a-4f) to the secondary station (fig. 5, Mobile Station 504 and fig. 1, MS 6a-6f), **regarding claim 4**, a primary station (fig. 4a-4c or fig. 5, recited in paragraph 0050, lines 1-20), characterized in that the status signal (fig. 5, "see steps 504-508, recited in paragraph 0069-0070-same time slot is being used) is the same signal as that for a negative acknowledgement ("decoding of data packet and subsequent NACK", recited in paragraph 0084, lines 1-14) , **regarding claim 5**, a secondary station (fig. 5, Mobile Station or fig. 1, Mobile Station 6a-f for use in a communication system (fig. 2, Communications System, recited in paragraph 0052, lines 1-11) having a downlink indicator channel (fig.5 control channel 502 used for paging messages, recited in paragraph 0136, lines 1-13) for the transmission of an indicator signal (fig. 5, "Base Station 502 transmits paging signal", recited in paragraph 0069, lines 1-7) indicating that a data packet ("data to be transmitted", recited in paragraph 0069, lines 1-4 and paragraph 0017, lines 8-14) is scheduled to be transmitted on a downlink data channel (fig.5 control channel 502 used by the Base Station, recited in paragraph 0136, lines 1-13) from a primary station (fig.5 and fig. 1, Base Station 4a-4f) to the secondary station (fig. 5, Mobile Station 504 and fig. 1, Mobile Station 6a-6f) wherein receiving means are provided for receiving the indicator signal (fig. 5, Mobile Station 504 receiving paging message on control channel, recited in paragraph) and the data packet("mobile station receiving data", recited in paragraph 0041, lines 3-6), acknowledgement means ("link measurement of signals and

subsequent transmission to base station", recited in paragraph 0078, lines 1-12 "error detection and subsequent NACK", recited in abstract, lines 9-15) are provided for transmitting on an uplink channel a signal to the primary station to indicate the status ("upon decoding the paging messages, mobile station measures forward link signal and transmits to base station", recited in paragraph 0044, lines 1-6 as shown in fig. 5, Mobile Station 504 and 506) of the received data packets (fig. 5, MS receiving forward link packets 512, recited in paragraph 0070, lines 18 and "decoding of data packets", recited in paragraph 0076, lines 1-22, **regarding claim 6**, a secondary station (fig. 5 and fig. 1, Mobile Station 6a-6f, recited in paragraph 0050, lines 1-20), characterized in that the status signal (fig. 5, "see steps 504-508, recited in paragraph 0069-0070-same time slot is being used) is the same as that used for a negative acknowledgment ("decoding of data packet and subsequent NACK and subsequent NACK", recited in paragraph 0084, lines 1-14), **regarding claim 14**, a method of operating a communication system (fig. 2, Communications System, recited in paragraph 0052, lines 1-11) having a downlink indicator channel (fig. 5 control channel 502) for the transmission of an indicator signal (fig. 5, "Base Station 502 transmits paging signal", recited in paragraph 069, lines 1-7) for the transmission of an indicator signal indicating that a data packet ("data to be transmitted", recited in paragraph 0069, lines 1-4 and paragraph 0017, lines 8-14) is scheduled to be transmitted on a downlink data channel ("forward link control channel", recited in paragraph 0136, lines 1-6) from a primary station (fig. 5, Base Station 502), the method comprising the secondary station(fig. 5, , Mobile Station 504) receiving the indicator signal ("mobile station responding to paging messages, recited in paragraph

0018, lines 3-13 and fig. 5, Block 504 and 506) and the data packet("mobile station receiving data", recited in paragraph 0041, lines 3-6).

Padovani et al. discloses all the subject matter of the claimed invention with the exception of the following features: **regarding claim 1**, wherein the secondary station comprises means for transmitting on an uplink channel a status signal to indicate receipt of the indicator signal before transmission of a positive or negative acknowledgement to indicate the status of the received data packet, **regarding claim 3**, means are provided for transmitting a status signal to indicate receipt of the indicator signal before transmission of a positive or negative acknowledgement to indicate the status of the received data packet, **regarding claim 5**, means are provided for transmitting a status signal to indicate receipt of the indicator signal before transmission of a positive or negative acknowledgement to indicate the status of the received data packet, **regarding claim 13**, a secondary station, characterized in that means are provided for transmitting a plurality of status signals signal, **regarding claim 14**, transmitting on an uplink channel a status signal to indicate receipt of the indicator signal before transmission of a positive or negative acknowledgement to indicate the status of the received data packet. However, Diachina et al. in a similar field of endeavor discloses: **regarding claim 1**, wherein the secondary station (fig. 3, Mobile Station 120, recited in column 5, lines 33-46) comprises means for transmitting on an uplink channel (fig. 3, Voice and Control Channel Transceiver 170, recited in column 5, lines 36-38) a status signal ("transmitting status signal by Mobile station", recited in column 3, lines 1-2 and column 4, lines 1-7) to indicate receipt of the indicator signal before transmission of a

positive or negative acknowledgement to indicate the status of the received data packet (response to status signal is sent first by the mobile station prior to acknowledging of data/frames reception, recited in abstract, lines 1-11), **regarding claim 3**, means are provided for transmitting a status signal to indicate receipt of the indicator signal ("mobile station transmit in response to status request", recited in column 4, lines 7-11) before transmission of a positive or negative acknowledgement to indicate the status of the received data packet, **regarding claim 5**, means are provided for transmitting (fig. 3, Voice and Control Channel Transceiver 170, recited in column 5, lines 36-38) a status signal ("transmitting status signal by Mobile station", recited in column 3, lines 1-2 and column 4, lines 1-7) to indicate receipt of the indicator signal ("mobile station transmit in response to status request", recited in column 4, lines 7-11) before transmission of a positive or negative acknowledgement to indicate the status of the received data packet (response to status signal is sent first by the mobile station prior to acknowledging of data/frames reception, recited in abstract, lines 1-11), **regarding claim 13**, a secondary station (fig. 3, Mobile Station 120, recited in column 5, lines 33-46), characterized in that means are provided for transmitting a plurality of status signals signal ("transmitting status signal by Mobile station", recited in column 3, lines 1-2 and column 4, lines 1-7), **regarding claim 14**, transmitting on an uplink channel (fig. 3, Voice and Control Channel Transceiver 170, recited in column 5, lines 36-38) a status signal ("transmitting status signal by Mobile station", recited in column 3, lines 1-2 and column 4, lines 1-7) to indicate receipt of the indicator signal ("mobile station transmit in response to status request", recited in column 4, lines 7-11) before

transmission of a positive or negative acknowledgement to indicate the status of the received data packet (response to status signal is sent first by the mobile station prior to acknowledging of data/frames reception, recited in abstract, lines 1-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Padovani et al. by using features as taught by Diachina et al. in order to provide frames reception quality through the use of status report (See, column 3, lines 55-65 for motivation).

6. **Claims 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Diachina et al. as applied to claim 5 above, and further in view of Wang et al (US 5,933,763).

Regarding claims 7, Padovani et al. and Diachina et al. disclose the secondary station (fig. 2, Mobile Station) as recited in **claim 7**. Padovani and Diachina are however silent with respect to the status signal transmitted at the same power as a positive acknowledgement. However, Wang et Al. in a similar field of endeavor discloses that the status signal ("attenuated acknowledgement signal", recited in column 4, lines 13-17) is the same signal used at the same power (increased of acknowledgement signals without increasing the power", recited in column 4, lines 17-24) as positive acknowledgement as recited in **claim 7**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Padovani et al. with Diachina. by using features as taught by Wang et al. in order to provide an efficient use of power (See column 11, lines 9-26 for motivation).

7. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. et al. in view of Diachina et al. as applied to claims 5 above, and further in view of background disclosure of Shi et al (US 6,320,855 B1).

Padovani, Diachina and Wang disclose a secondary station as recited above. However, Padovani, Diachina and Wang are silent with respect to the following features: **regarding claim 8**, means are provided for resetting a timer on the receipt of the indicator signal and for modifying a characteristic of uplink transmission until the timer expires. However, Shi et al. in the background disclosure of the invention discloses means are provided for resetting a timer on the receipt of the indicator signal ("resets timer when message on paging channel is received", recited in column 5, lines 26-31) and for modifying a characteristic of uplink transmission until the timer expires ("timer expires and mobile station enters determination substrate", recited in column 5, lines 44-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Padovani et al et al with Diachina et al and with Wang et al. by using features disclosed in the background of Shi et al. in order to provide power conservation by resetting the timer (See, column 5, lines 35-41 for motivation).

8. **Claims 9 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Diachina et al. and Wang et al and background

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disclosure of Shi et al as applied to claim 8 above, and further view of Rune et al (US 6,434,396 B1).

Padovani, Diachina, Wang, and background disclosure of Shi disclose the secondary station as recited in above paragraph. However, They do not disclose the following features: **regarding claim 9**, means are provided for transmitting a negative acknowledgement for each time at which a data packet could have been transmitted if no transmission of a data packet is detected, and in that such negative acknowledgements are only transmitted until the timer expires, **regarding claim 11**, means are provided for transmitting a positive or negative acknowledgement of a received data packet N times, where N is predetermined, and for transmitting subsequent negative acknowledgements until the timer expires. However, **Rune et al.** in a similar field of endeavor, teaches a secondary station (fig. 1, MS or mobile station responding to a paging signal RA/ACK from BS or base station, recited in column 2, lines 23-30) characterised in that means ("mobile station returning a negative ACK/NACK", recited in column 4, lines 46-53) are provided for transmitting a negative acknowledgement for each time at which a data packet could have been transmitted if no transmission of a data packet is detected ("transmission of incorrect data packet", recited in column 4, lines 39-41) and in that such negative acknowledgements are only transmitted until the timer expires ("paging signal not replied to by mobile terminal after expiry of time interval", recited in column 4, lines 41-45), **regarding claim 11**, a secondary station ("mobile station returning a negative ACK/NACK", recited in column 4, lines 46-53), characterised in that means are provided for transmitting a positive or

negative acknowledgement of a received data packet N times ("mobile station transmits negative ACK until positive ACK is received", (implies that mobile station can transmit acknowledgement multiple times), recited in column 6, lines 41-46), where N is predetermined, and for transmitting subsequent negative acknowledgements until the timer expires ("paging signal not replied to by mobile terminal after expiry of time interval", recited in column 4, lines 41-45) . Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Padovani with Diachina, Wang and background disclosure of Shi et al. by using features as taught by Rune et al. in order to minimize initial delay (See, column 1, lines 35-40 and, lines 54-65 for motivation).

9. **Claims 10 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al in view of Diachina et al, Wang et al. and background disclosure of Shi et al as applied to claims 8 above, and further in view of background disclosure of Khan et al (US 2002/0064167 A1).

Padovani, Diachina, Wang, background disclosure of Shi disclose a secondary station as recited in above paragraph. Padovani, Diachina, Wang, and background disclosure of Shi et al. do not disclose the following features: **regarding claim 10**, the timer has duration of one sub-frame, **regarding claim 12**, the timer has duration of N sub-frames. However, Khan et al in a similar field of endeavor discloses in his background disclosure, a secondary station (fig. 1, "receiving equipment transmits the ACK in a time slot", recited in paragraph 0012, lines 1-6) characterized in that the timer

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("timing relationship", recited in paragraph 0012, lines 6-13) has duration ("time elapsed or round trip delay", recited in paragraph 0014, lines 10-13) of one sub-frame ("time slot", recited in paragraph 012, lines 1-6) as recited in **claim 10**, a secondary station ("receiving equipment transmits the ACK in a time slot", recited in paragraph 0012, lines 1-6), characterized in that the timer ("timing relationship", recited in paragraph 0012, lines 6-13) has a duration ("time elapsed or round trip delay", recited in paragraph 0014, lines 10-13) of N sub-frames ("timeslots", recited in paragraph 0014, lines 1-10) as recited in **claim 12**. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Padovani with Diachina, Wang, and background disclosure of Shi et al by using features disclosed in the background of Khan et al. in order to increase the probability of correct reception by the mobile station or receiving equipment (See paragraph 0010, lines 6-22 for motivation).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baker et al (US 6,910, 168 B2), Moulsey et al (US 2002/0114291 A1), Tiedemann, Jr. et al (US 6,035,209), Khan et al (US 7,206,280 B1), Nishioka et al (US 6,871,078 B2), and Cudak et al (US 6,801,512 B1) are cited to show methods and systems that are related to claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Candal Elpenord whose telephone number is (571) 270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CE

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

